

VTF 2006

VIA Technology Forum

**Thinking Thin:
the Coming Back**

ASEKH MIS center
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*Embracing
Digital Intelligence*

What is MIS?

- **Definition of: MIS (Management Information System)**
 - An information **system** that integrates data from all the departments it **serves** and **provides** operations and management with the **information** they require.
 - An organized assembly of resources and procedures required to **collect**, **process**, and **distribute data** for use in decision making.

回歸精簡思考

- 目的 VS. 手段

- 手段影響目的

- 混淆了手段與目的

- For both user and IT

- 回歸最原始的思考

- What do you want to do?

- What are you doing?

- IT工作的省思

- 突破侷限於手段的思考

- 擴大思考的範圍：目的 \Leftrightarrow 手段；結構 \Leftrightarrow 行為

- 變動管理及蝴蝶效應

What is MIS?

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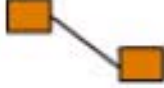


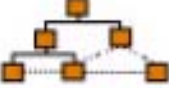




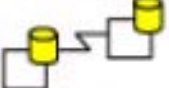
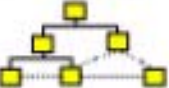


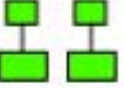


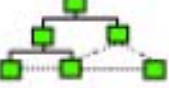








- **What do we face today?**
- **What are we doing right now?**
- **Thin Client Computing Architecture**
- **Why Think Client**
 - The benefits of Thin Client Deployment
- **Consideration factors on Thin Client Deployment**
- **Business Use Cases**
- **Conclusion**

Regulatory “Alphabet Soup”

A slew of new legislations and standards have emerged in the aftermath of the Enron, WorldCom and other debacles as governments impose measures designed to prevent future collapses. Those with the most far-reaching consequences include the following:

- **Sarbanes Oxley (SOX)**: a broad set of regulations and procedural mandates applicable to all companies trading on American stock exchanges
- **Basel II/ITIL/BS 15000**: directives regarding quality IT Service Management applicable to all European financial institutions
- **Gramm-Leach-Bliley Act**: regulations designed to protect the privacy of personal financial information held by financial institutions
- **FDA**: ratcheted up the IT control procedures that must be followed by pharmaceutical companies
- **HIPAA**: patient health, administrative, and financial data; unique identifiers (ID numbers) for each healthcare entity
- **E911**: regulations regarding emergency location identification in an era of VoIP telephony

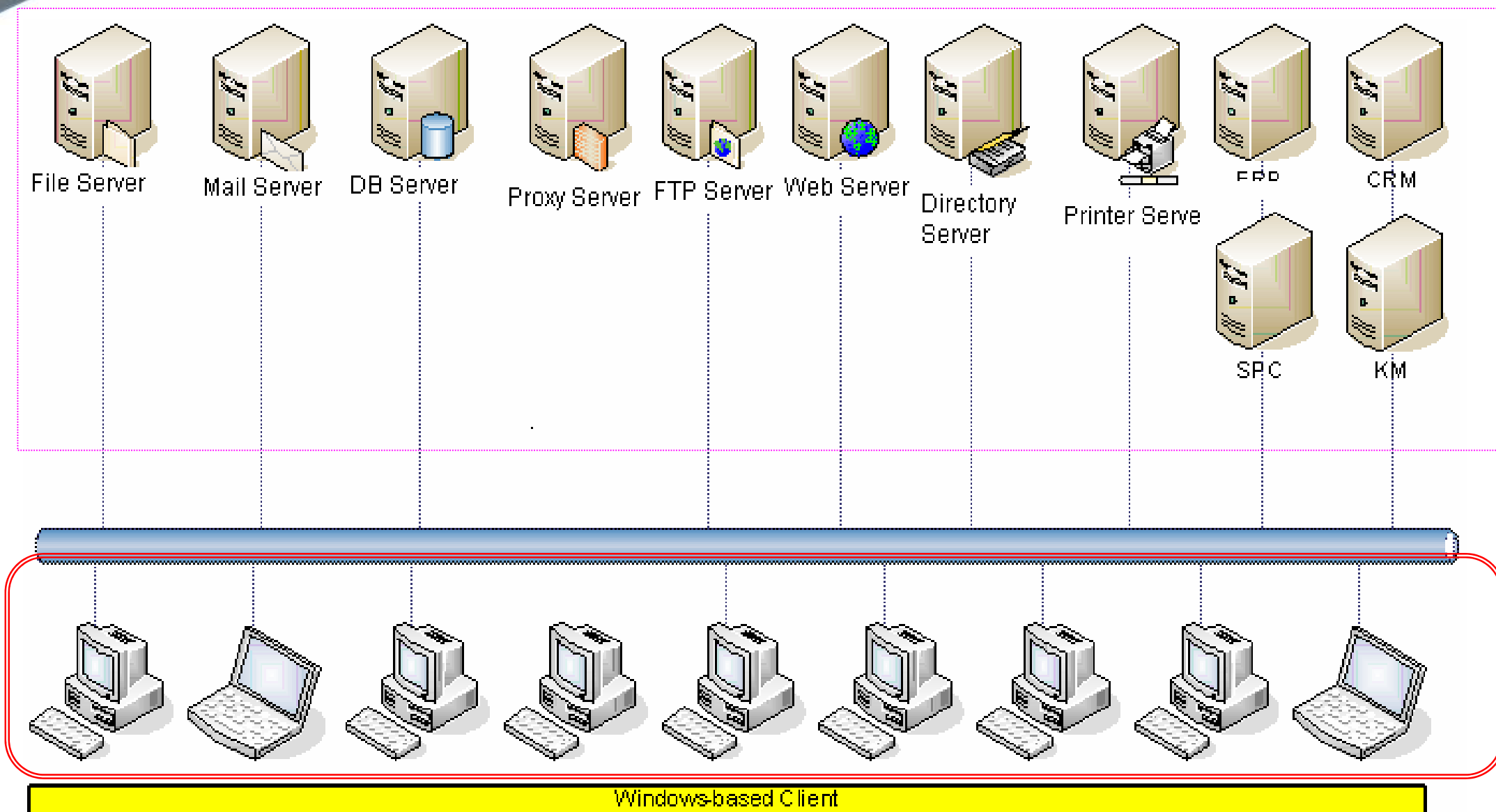
A Framework for Enterprise Architecture

| | DATA What | FUNCTION How | NETWORK Where | PEOPLE Who | TIME When | MOTIVATION Why | |
|--|---|--|--|--|--|--|--|
| SCOPE (CONTEXTUAL) | List of Things Important to the Business  | List of Processes the Business Performs  | List of Locations in which the Business Operates  | List of Organizations Important to the Business  | List of Events/Cycles Significant to the Business  | List of Business Goals/Strategies  | SCOPE (CONTEXTUAL) |
| Planner | ENTITY = Class of Business Thing | Process = Class of Business Process | Node = Major Business Location | People = Major Organization Unit | Time = Major Business Event/Cycle | Ends/Means = Major Business Goal/Strategy | Planner |
| BUSINESS MODEL (CONCEPTUAL) | e.g. Semantic Model  | e.g. Business Process Model  | e.g. Business Logistics System  | e.g. Work Flow Model  | e.g. Master Schedule  | e.g. Business Plan  | BUSINESS MODEL (CONCEPTUAL) |
| Owner | Ent = Business Entity Rein = Business Relationship | Proc. = Business Process IO = Business Resources | Node = Business Location Link = Business Linkage | People = Organization Unit Work = Work Product | Time = Business Event Cycle = Business Cycle | End = Business Objective Means = Business Strategy | Owner |
| SYSTEM MODEL (LOGICAL) | e.g. Logical Data Model  | e.g. Application Architecture  | e.g. Distributed System Architecture  | e.g. Human Interface Architecture  | e.g. Processing Structure  | e.g. Business Rule Model  | SYSTEM MODEL (LOGICAL) |
| Designer | Ent = Data Entity Rein = Data Relationship | Proc. = Application Function IO = User Views | Node = IS Function (Processor, Storage, etc) Link = Line Characteristic | People = Role Work = Deliverable | Time = System Event Cycle = Processing Cycle | End = Structural Assertion Means = Action Assertion | Designer |
| TECHNOLOGY MODEL (PHYSICAL) | e.g. Physical Data Model  | e.g. System Design  | e.g. Technology Architecture  | e.g. Presentation Architecture  | e.g. Control Structure  | e.g. Rule Design  | TECHNOLOGY MODEL (PHYSICAL) |
| Builder | Ent = Segment/Table/etc. Rein = Pointer/Key/etc. | Proc = Computer Function IO = Data Elements/Sets | Node = Hardware/Systems/Software Link = Line Specifications | People = User Work = Screen Format | Time = Execute Cycle = Component Cycle | End = Condition Means = Action | Builder |
| DETAILED REPRESENTATIONS (OUT-OF-CONTEXT) | e.g. Data Definition  | e.g. Program  | e.g. Network Architecture  | e.g. Security Architecture  | e.g. Timing Definition  | e.g. Rule Specification  | DETAILED REPRESENTATIONS (OUT-OF-CONTEXT) |
| Sub-Contractor | Ent = Field Rein = Address | Proc = Language Statement IO = Control Block | Node = Address Link = Protocol | People = Identity Work = Job | Time = Interrupt Cycle = Machine Cycle | End = Sub-condition Means = Step | Sub-Contractor |
| FUNCTIONING ENTERPRISE | e.g. DATA | e.g. FUNCTION | e.g. NETWORK | e.g. ORGANIZATION | e.g. SCHEDULE | e.g. STRATEGY | FUNCTIONING ENTERPRISE |

Mapping for SOX/Basel II

| | Data (What) | Process (How) | Location (Where) | People (Who) | Time (When) | Motivation (Why) |
|--|--|---|--|--|--------------------------------------|---|
| Objective / Scope (Ballpark view) | Basel II - Requires the entire data column | | | | | |
| Model of the business (Business view) | SOX 404 -Definitions, terms; Basel II - Vocabulary, Business Definitions | SOX 409 - Process Improvement | SOX - Jurisdiction issues; Basel II - Home - Host | SOX 404 - Data Governance and other roles; Basel II - Data Governance | SOX 409 - Triggering business events | SOX 404 - Rules, KPIs; Basel II - Corporate Governance |
| Unconstrained system model (Architect's view) | SOX 302 / 906 Understanding and measure of data, 404 Specs & standards, data elements; 409 -Data relevance; Basel II - Data structures | SOX 404 / 409 - Business Intelligence | | SOX 404 - Data Stewardship and security requirements; Basel II - Data Stewardship | SOX 409 - Triggering system events | |
| Technology Model (Designer's view) | Basel II - Data structures | SOX - List of financial reports and its fields; Basel II - Transformations and predictive models | | | | |
| Technology model (Builder's view) | | | | | | |
| Production (Functioning) system | SOX 302/906 - Reconciliation, completeness, tracking duplicates, accuracy; Basel II - Taxonomies | SOX 409 - Data availability, timeliness; 302/906 & Basel II - Data lineage & transformations | | SOX 404 - Usability & metrics on usability | | |

Typical IT Architecture



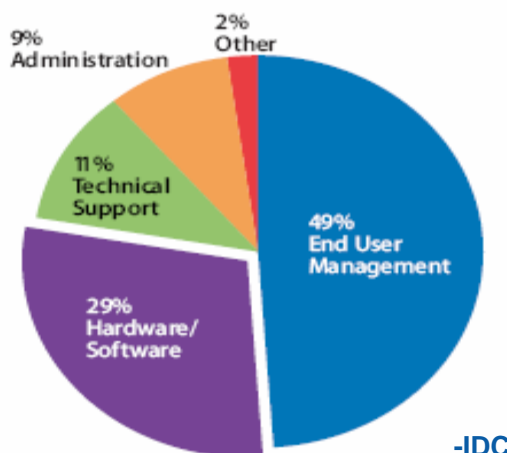
State of the Enterprise Desktop

Heterogeneity



High Management Costs

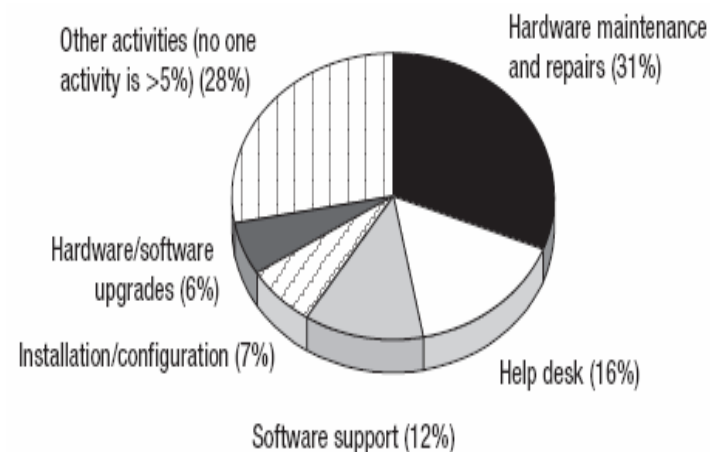
\$6,800* / user/ year)



-IDC

Admin Inefficiencies

Too tactically focused



-IDC

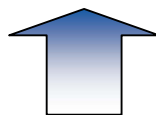
Security Threats

Need for preventive/proactive measures



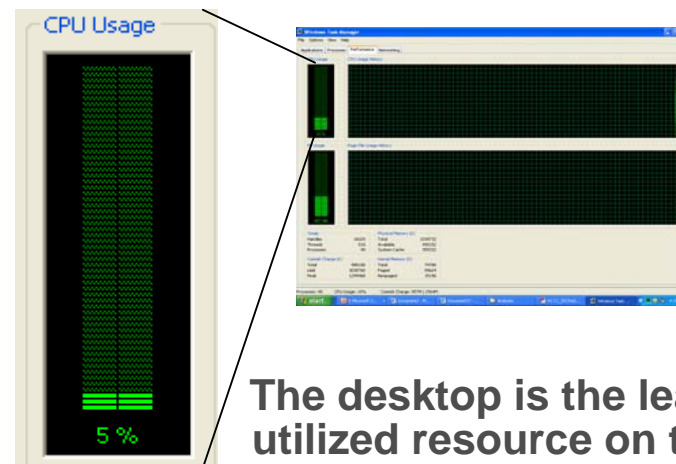
Software Compliance Risks

Internal



External

Low Resource Utilization



The desktop is the least utilized resource on the network!

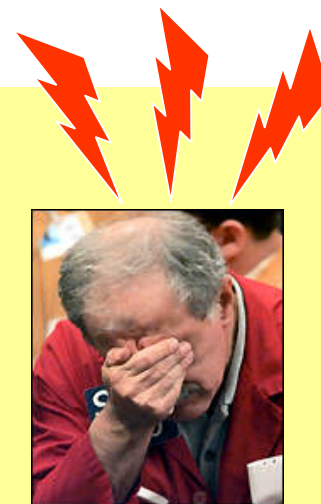
IT 面臨的需求與挑戰

- 資料相容性：由於各使用者選用不同的PC軟體，使得各單位之資料在交換時，遇到相容性的問題，經常需要花費時間作轉換。
- 週邊設備共用性：由於使用者常使用其專屬設備，使得...
- 軟體安裝與維護：...
- 資料完整性：...
- 資料安全：...
- 智慧財產權：由於PC使用者眾多，智慧財產權之考量變成為十分重要的事。
- 電腦病毒：PC中毒後，常使得重要資料喪失，而後續的補救更造成資訊人員人力支援的短缺。

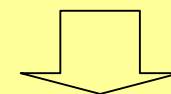
手段 (PC as client) 所造成

IT部門所面臨的問題

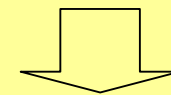
- PC 硬體維護 時間過高，無法充分發揮資訊管理人力資源的效益
- PC的應用 軟體派送、前端用戶服務等耗時過長
- PC的 軟體安裝 與升級更新維護過慢
- PC硬體建置成本高，且需年年採購新PC，卻無法充分利用新PC產能，造成企業資源的浪費
- PC系統缺乏擴充彈性，衍生出許多管理上的盲點與困難，舉凡病毒管理、硬體資產管理與軟體合法授權管理。
- 資訊安全與企業智慧財產保護的問題。
- 週期性的硬體維護與升級作業成本高
- 不成比例的資訊管理人力與PC-Client數
- 企業組織不斷擴大，資訊系統的維護管理更加困難
- 軟體昇級，需汰換一半以上的PC，因PC等級不夠



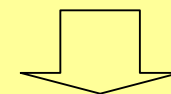
效能 (Performance)



管理 (Management)



存取 (Access)



安全 (Security)

What Make It happen to IT?

- 合久必分, 分久必合
 - Mainframe
 - Personal computer
 - Client-server
 - Network computing
 - Consolidation
- **The role of desktop in Enterprise IT architecture**
 - Access point to provide necessary and sufficient information to users
 - One type of access point for many types of users!
 - Managed PC as desktop?
 - Questions
 - Do we provide too much computing power?
 - Do we provide too much storage space?
 - Do we provide too much freedom or control?
 - Today's problems come from yesterday's "solutions."

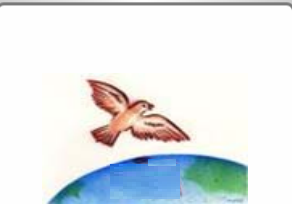
Need for New Capabilities

Disasters



Need to quickly recover, re-provision and reestablish user access to complete desktop environments to ensure business continuity

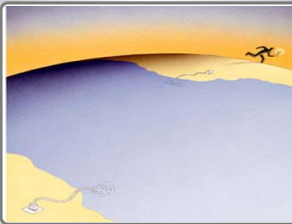
Need for Instant Desktop Recovery & Provisioning



Need to be able to support a virtual work environment where users have alternative access to *complete desktop resources* while working remotely

Need for Alternative Workspace Access

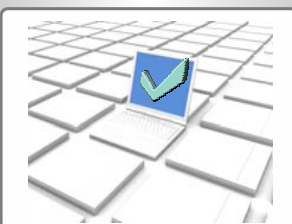
Outsourcing



Need to secure data and resources within the corporate data center and provide secure access to outsourcing / offshore developers or transaction workers

Need for Secure, Controlled Access by Outsourcing Entities




Compliance



Need to contain desktop proliferation and build a standardized, centrally managed desktop environment that adheres to internal and external compliance guidelines

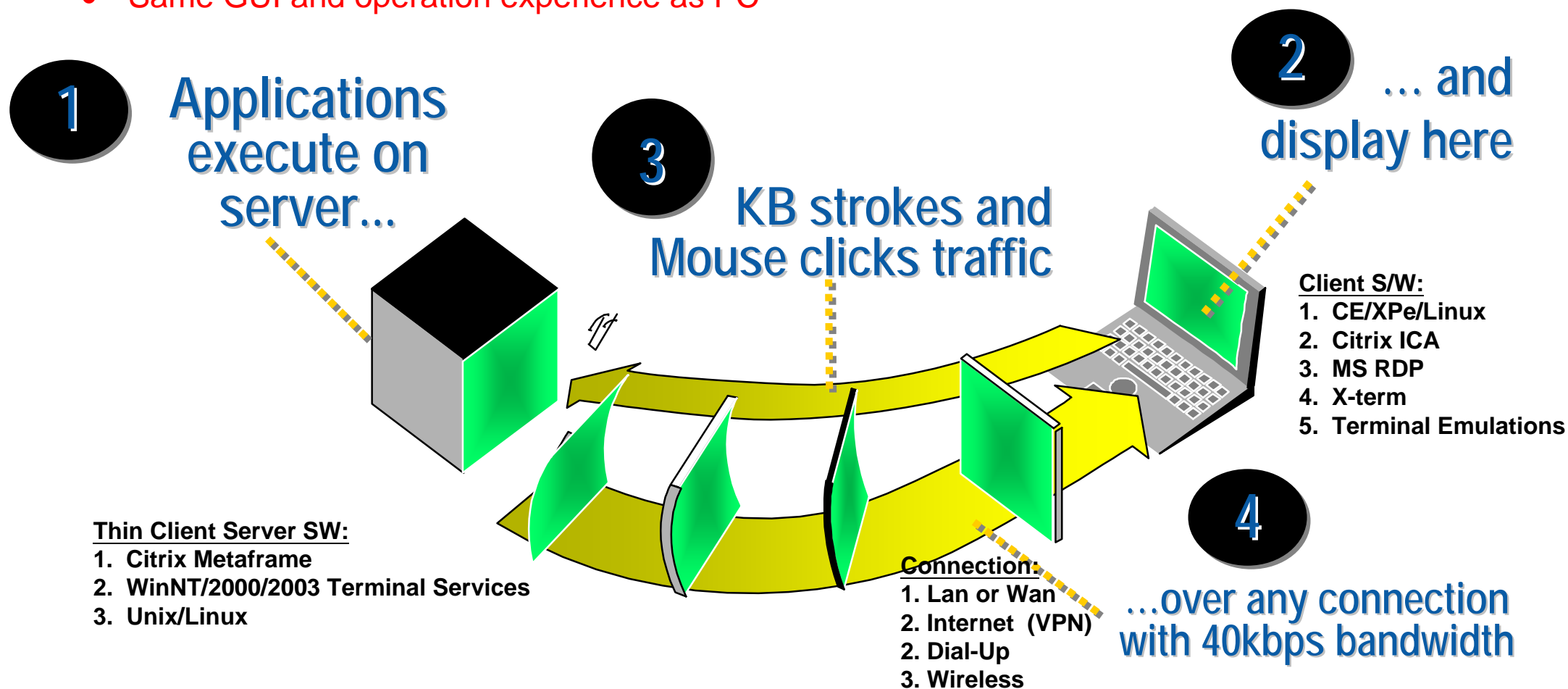
Need for Desktop Consolidation & Standardization

Users Segments

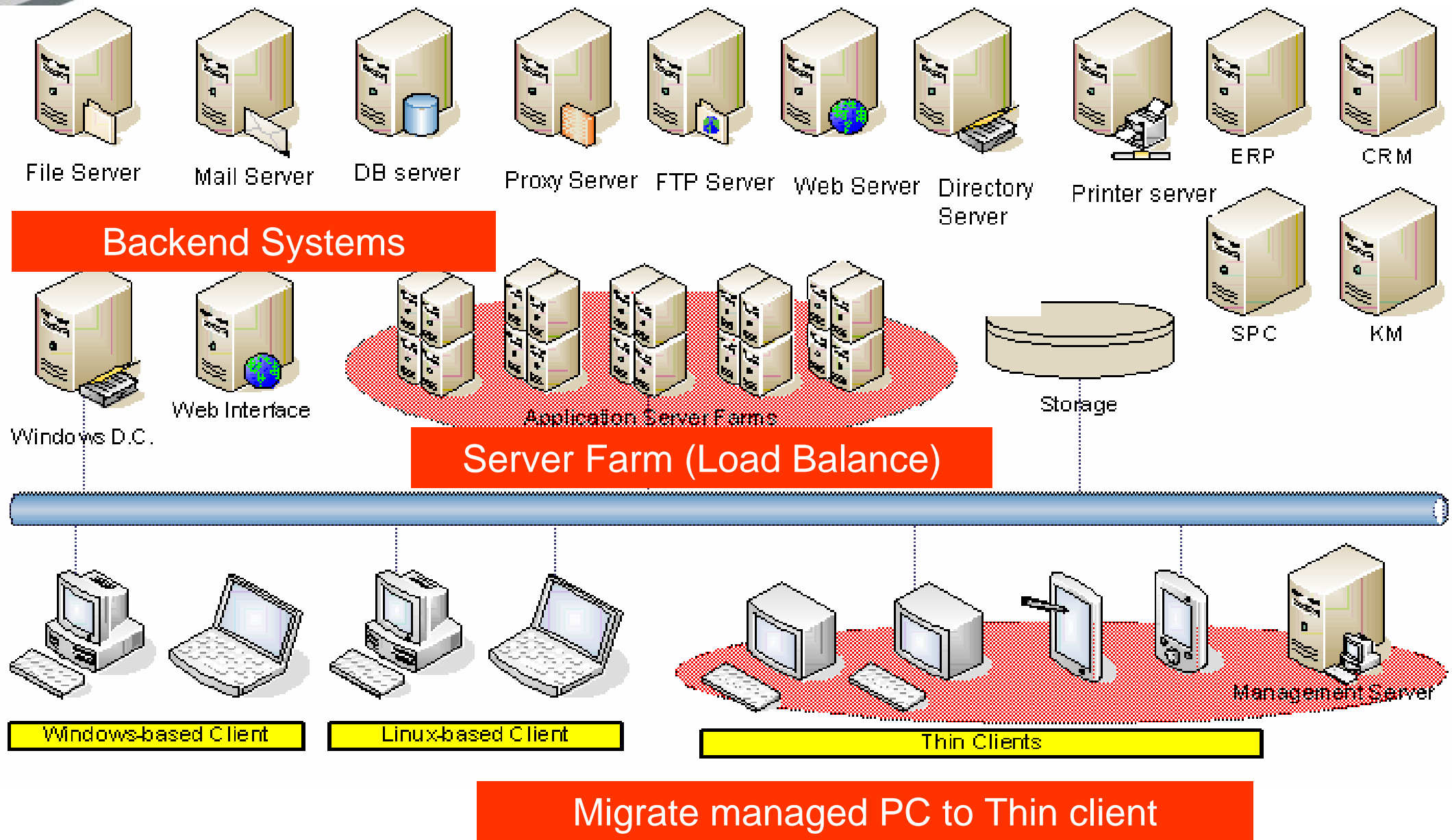
| | <u>Transaction Workers</u> | <u>General Office Workers</u> | Knowledge Workers |
|---------------|---|--|---|
| Examples | Call Center Workers Reservation Clerks Retail Clerks Doctors Nurses Operator | Salespeople Teachers Students Marketing Admin. Assts. Logistics control | Analysts Managers Consultants Engineers |
| Company Needs | Security Reliability Centralized Control | Economy Reliability | Flexibility Independence |
| Information | Structured format Standard operation | Most structured format Standard operation Some information create | Non structured format Ad hoc operation Intensive information creation and analysis required |
| Managed PCs |  |  |  |

“Thin-Client” – Server Based Computing







- Data always kept in server – high data security!
- AP installed and run on server – easy release management
- Hardware failure on thin-Client will not cause any data loss
- **Same GUI and operation experience as PC**



Thin Computing Arch.



Target Users

| | <u>Transaction Workers</u> | <u>General Office Workers</u> | Knowledge Workers |
|---------------|---|---|---|
| Examples | Call Center Workers Reservation Clerks Retail Clerks Doctors Nurses | Salespeople Teachers Students Marketing Admin. Assts. | Analysts Managers Consultants |
| Company Needs | Security Reliability Centralized Control | Economy Reliability | Flexibility Independence |
| TCO Benefits* | 35% | 20% | |
| Thin Clients |  |  |  |
| Managed PCs |  |  |  |

Improved Manageability



Faster, Easier Provisioning

- Easily provision desktop images based on approved, pre-built templates



Dynamic Resource Management

- Increase hardware utilization and dynamically provision & manage resources to meet varying needs



Safe, secure software updates

- Safely and securely test software updates on virtual “test environments” before mass deployment



Simplified Support

- Easily replicate and solve problems by capturing snapshots of desktops or simply replace the desktop



Quicker, Complete Recovery

- Quickly recover and redeploy complete desktops in the event of disasters

Better Security



Effective User Isolation

- Users and Desktops are isolated – which means one user cannot access the data in another user's machine – ensuring data privacy and protection



Desktop Access Control

- Ability to control which users (or groups) have / don't have access to a specific desktop or a group of desktops



Secure Configurations

- Ability to control which resources are available / not available within each desktop (e.g. flash drive, hard disks, network ports etc.) and what users can do (copy / print / network access etc.)



Secure Desktop Disposal

- You can ensure safe, secure disposal by simply deleting the desktop image – leaving no physical trace behind

Reduced Costs



Minimize Management & Support Costs

- Reap management / support cost & time savings by consolidating and managing enterprise desktops all within the data center.



Leverage Existing Investments

- Continue to leverage existing infrastructure and desktop management tools - No need to invest in new tools and skill sets



Desktop Consolidation & Containment

- Provide access to multiple desktop environments through a single device – You now only need one device per user



Reduce Downtime Costs

- Significantly reduce desktop downtime through virtual desktops that are “always on” – Also, easily recover or replace desktops quickly in the event of a crash



Extended Life

- By achieving hardware independence you can continue to support and extend the life of legacy hardware or software helping reduce or delay replacement costs

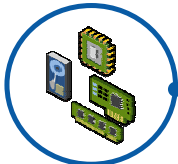
Core Principles



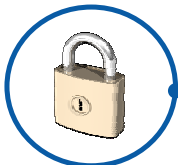
Centralized Management – *desktops are standardized, always connected, always powered on in the data center facilitating efficient management*



Complete Desktop Access - *Remote access to full desktop environments from anywhere, anytime and also access multiple environments from the same device*



Resource Optimization – *Optimize resource utilization by hosting virtual desktops on shared servers and through dynamic resource management*



Secure Environment / Isolation– *Secure app & data resources centrally within the datacenter while ensuring complete user isolation*



Flexible Choice – *Use any (server or client) hardware running any OS/ App combination while leveraging existing infrastructure & tools*



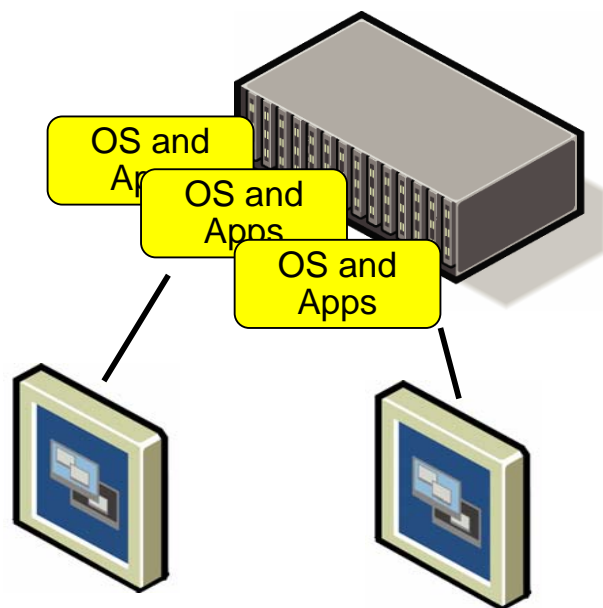
Service-Orientation – *deliver easy, personalized access while ensuring instant provisioning, faster recovery and quicker problem resolution*

Disadvantage of Thin Client

- **Need for a More Powerful Server**
 - Since all processing in thin client computing is performed on the network server, it is imperative that the server be extremely powerful. The need for a high level of computing ability will require most businesses to purchase a new machine or machines for this purpose.
- **Lack of User Control**
 - Another concern in thin client computing is that individual users have little control, this may be a negative to the end user. For example, a user may find that he does not have the appropriate application to complete an assigned task, the user must get approval by the network administrator. This can cause a time delay and may leave the user feeling inept due to his reliance on the system administrator.
- **Inability to Use Certain Applications**
 - A potentially serious disadvantage of thin client computing is the inability to use certain applications. Depending on the needs of the firm, this may not be an issue.
- **Today's solution could cause tomorrow's problem**

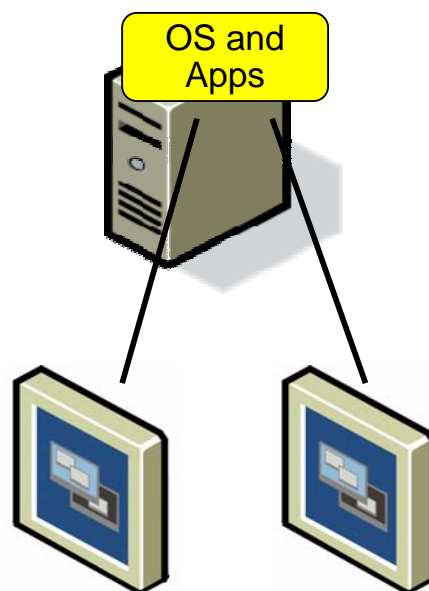
Server Based Computing Options

Blade PC



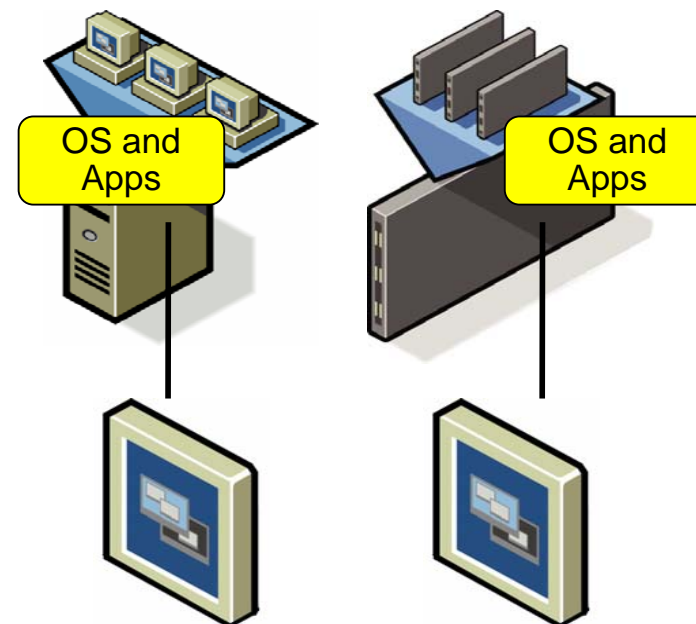
- e.g. ClearCube, HP CCI
- Full desktop environment on each blade

Shared Services



- e.g. Citrix or Terminal Services
- Users share applications

VDI



- Each user gets an individual VM

Business Use Cases

Outsourcing/ Offshoring



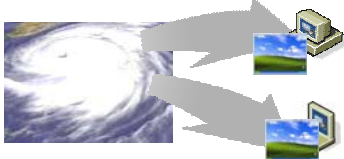
Secure corporate assets within your own data centers while providing controlled access to external transaction workers

Desktop Consolidation



Consolidate, standardize and centrally manage desktops distributed across the enterprise (incl. branches) within corporate data centers

Disaster Recovery



Ensure desktop continuity by redirecting user access to alternate desktop infrastructure while helping quickly and reliably recover desktops and data in the main data center

Alternative Workspaces



In the event of a pandemic outbreak, ensure alternative, remote access to complete desktop environments and resources for users safely located away from infected areas

Outsourcing / Offshoring

A secure way to provide desktop environments for transaction workers such as call centers & order processing, particularly in outsourced and offshore environments

Problem

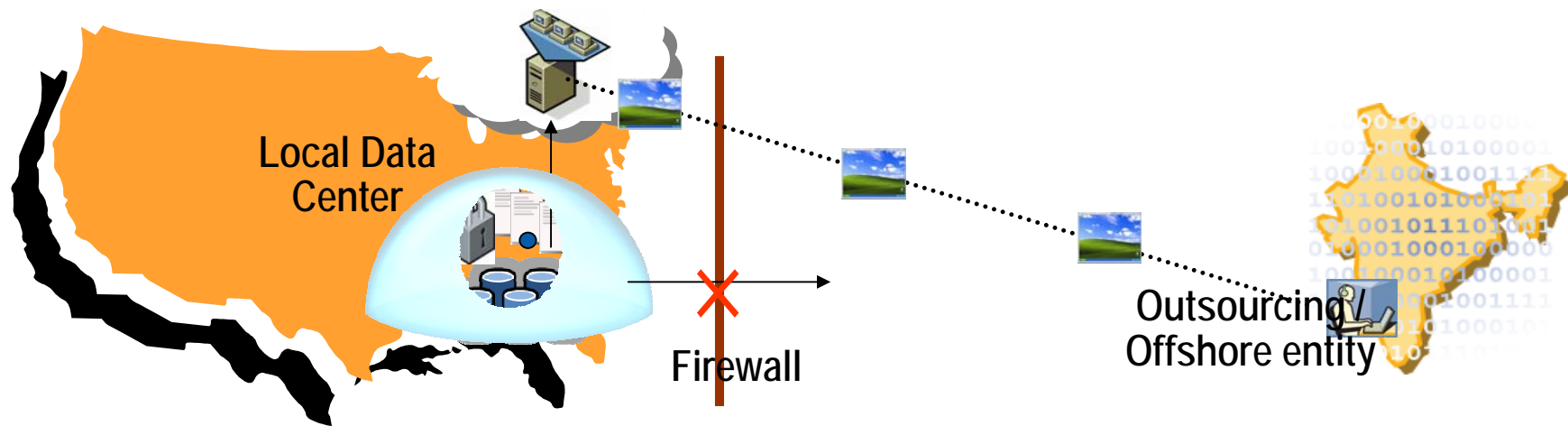
- Cost of building proprietary infrastructure
- Complexity and costs of ensuring security
- Limited ability to manage systems of offshore/outsourcing entities

Solution

- Centrally host all desktop environments within the data center
- Provide Secure access to external users
- Share infrastructure among multiple entities

Benefits

- Reduced security & compliance risks
- Complete control over systems and assets
- Reduced infrastructure costs



Developer Desktop Consolidation

Enables organizations to provide local or offshore developers flexible access to multiple desktop environments in a secure and cost-effective manner

Problem

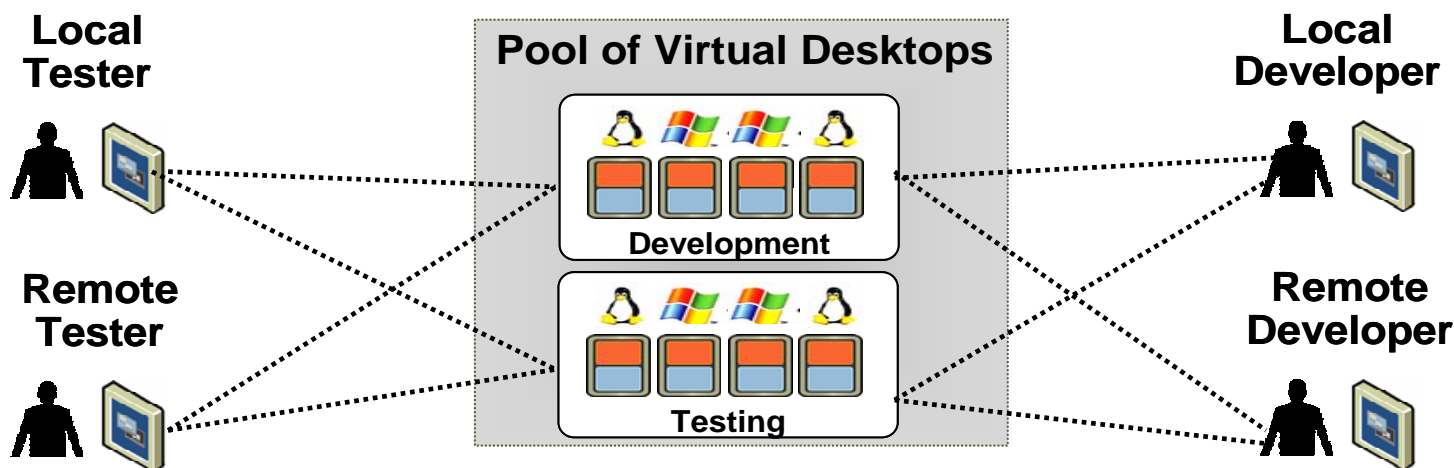
- Developers need access to multiple desktop environments
- Each development site requires duplicate infrastructure
- Developers spend over 30% of their time setting up dev/ test environments

Solution

- Centrally host all desktop environments
- Create a library of pre-configured dev/ test environments
- 1 desktop or device / user
- Share infrastructure among users and sites in a secured manner

Benefits

- Contain desktop proliferation and simplify development infrastructure
- Reduce capital and operational costs
- Improve productivity
- Enable secure offshore development



Branch-office Consolidation

Is an efficient way to centrally manage branch office desktop environments within corporate data centers to ensure complete desktop standardization and compliance across the enterprise while reducing desktop management costs

Problem

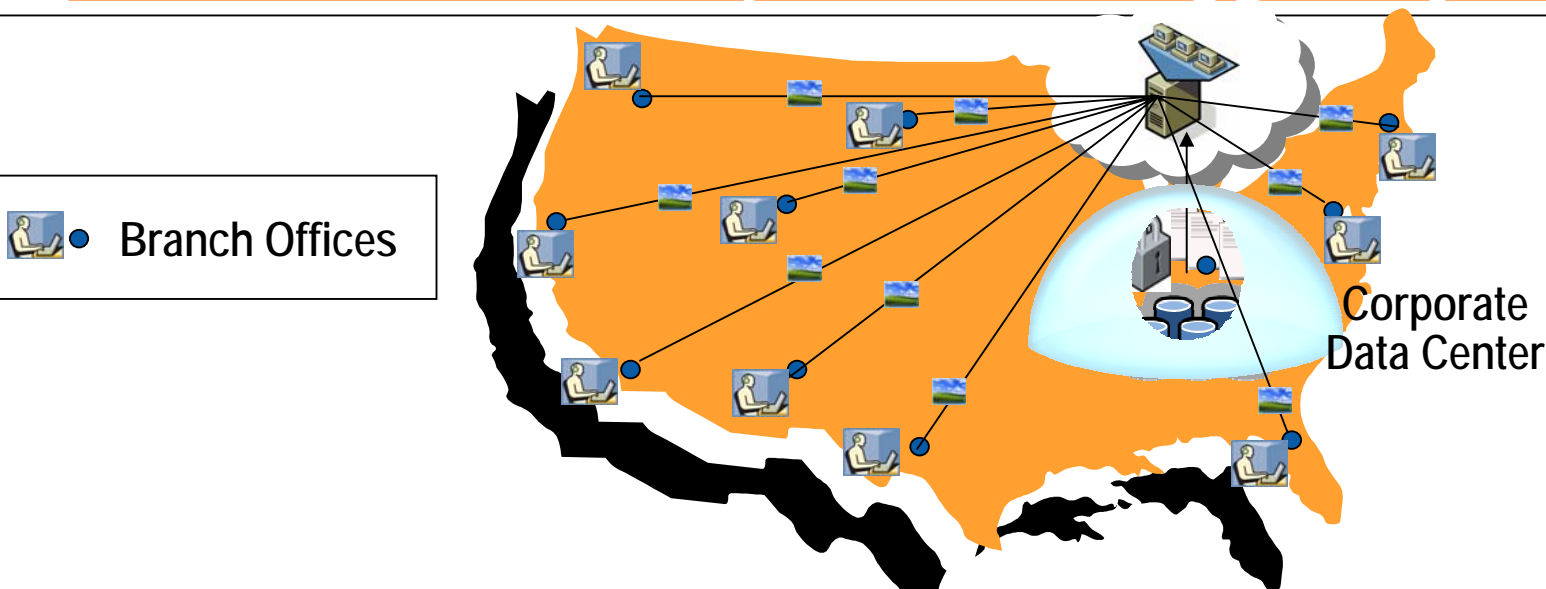
- High costs of supporting desktop infrastructure across branches
- Lack of Standardization across branches
- Lack of skill sets available at remote branches

Solution

- Centrally host all desktop environments in the corporate data center
- Centrally manage and support all branch desktops
- 1 desktop or device / user
- Share infrastructure among users and sites

Benefits

- Contain desktop proliferation within branches
- Reduce capital and operational (support) costs
- Desktop standardization & compliance across branches



Branch office users seamlessly access enterprise desktops hosted and managed centrally within corporate data centers

Disaster Recovery

Provides a reliable way to back-up desktop environments within DR sites, redirect user access to this site in case of a disaster and ensure full desktop and data recovery

Problem

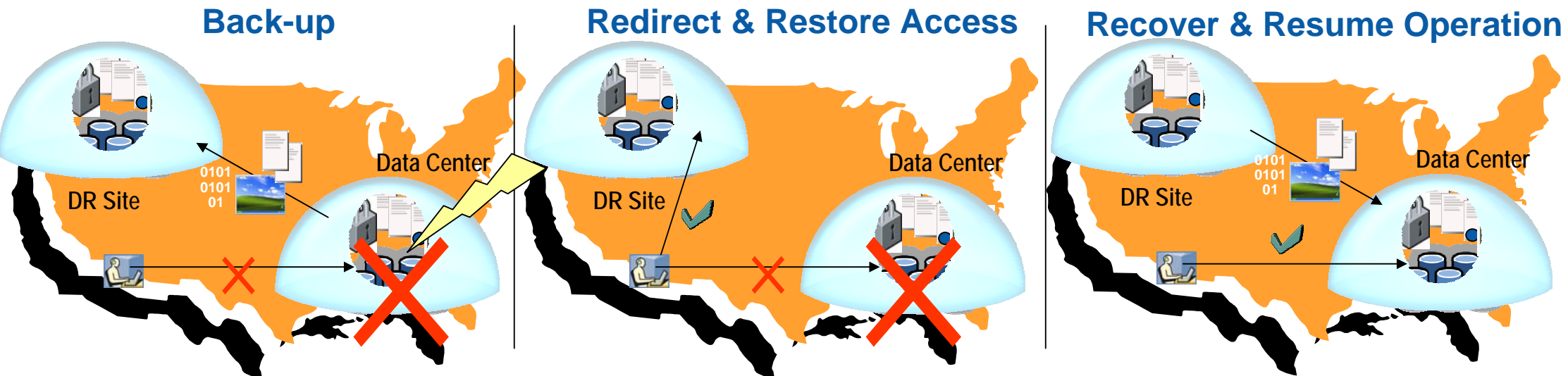
- Expedite recovery from physical disasters
- Simplify DR Infrastructure
- Provide uninterrupted access to users

Solution

- Back-up desktops & data on DR infrastructure
- Capture and save complete desktop states
- Multiple Recovery options (P2V / V2V)
- Instant provisioning

Benefits

- Reduced cost of DR Infrastructure
- Reduced cost of Business Downtime
- Improved User productivity



Alternative Workspaces

A secure way to provide continuous, remote access to users working from alternative workspaces in the event of a pandemic outbreak

Problem

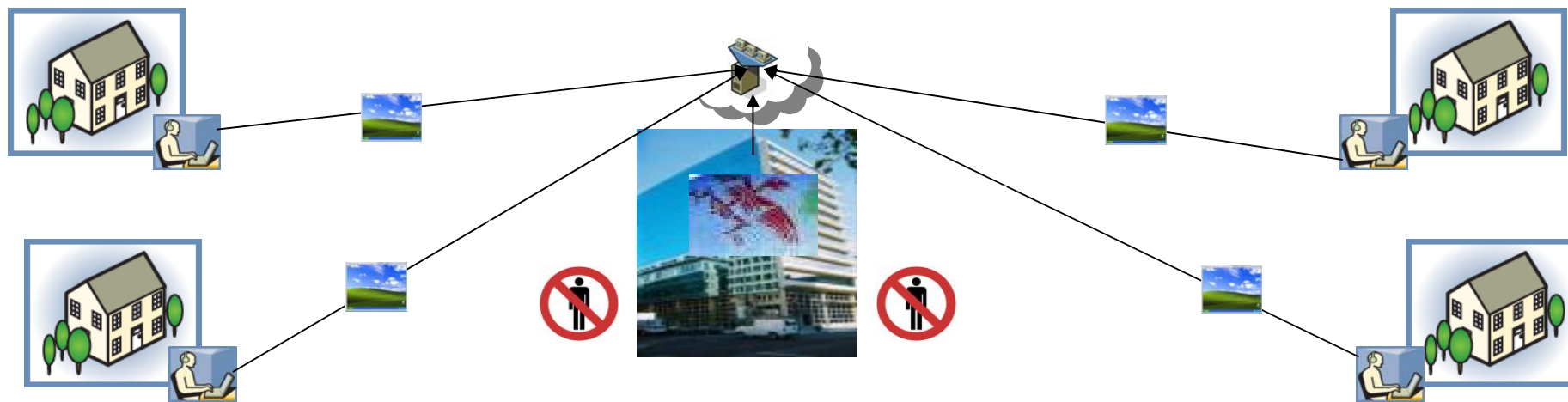
- Support employees away from infected areas and from each other
- Continue to provide remote access to full desktop resources
- Existing solutions have limitations and may not work in full-scale break-out

Solution

- Centrally host all desktop environments
- Users gain anytime access to complete desktop resources from anywhere
- Share infrastructure among users and sites

Benefits

- Avoid employee health risks
- Reduce business downtime
- Provide anytime, anywhere, anyhow access to complete desktop resources
- Reduced costs of pandemic risk management



Conclusion

- **What do we want to do?**
 - Users: anytime, anywhere - accessibility
 - IT: anytime, anywhere - serviceability
 - And more: flexibility, availability, cost, ...
 - IT service provisioning
- **It is an allocation issue for resources: computing power, storage, and data ownership**
 - Centralized vs. distributed architecture
 - Installation, operation, and sustaining costs
- **It is critical decision to your MIS function**
 - 任何重大的決定,必造成重大的遺憾
 - Good at change, and happy to change